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SEWAGE AND WATER WORKS CONSTRUCTION, 1961

William H. Mills, Jr., et al

Public Health Service
Washington, D. C.

1961

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U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Public Health Service

SEWAGE AND WATER WORKS CONSTRUCTION 1961

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
Division of Water Supply and Pollution Control
Washington 25, D.C.

I

Related Publications

Sewage Treatment Works Contract Awards, 1952–1957
Public Health Service Publication No. 633

Sewage and Water Works Construction, 1957
Public Health Service Publication No. 608

Sewage and Water Works Construction, 1958
Public Health Service Publication No. 673

Sewage and Water Works Construction, 1959 edition
Public Health Service Publication No. 758

Sewage and Water Works Construction, 1960 edition
Public Health Service Publication No. 758

Public Health Service Publication No. 758
1961 Edition

PREFACE

This annual report of "Sewage and Water Works Construction 1961" is published as one part of the basic data program required and authorized in Public Law 660 (as amended by Public Law 87–88), the Federal Water Pollution Control Act.

The data published herein provide a continuing and ready source of information and reference as to how successfully the national needs in municipal water supply and pollution control are being met through construction of the necessary physical facilities.

This publication also establishes important year-to-year cost trends in the national economic picture in the three types of public works construction involved. Such data are valuable not only to Federal, State and local government authorities and officials responsible for providing water supplies and for controlling pollution, but are also valuable to the building and contracting trades and to the engineering profession.

This report was prepared by William H. Mills, Jr., Junior Assistant Sanitary Engineer (R), and Elsie M. Gibson and Florence G. Simmons, Statistical Assistants, under the direction of Richard S. Green, Sanitary Engineer Director and Chief of the Basic Data Branch, Division of Water Supply and Pollution Control.

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SECTION 1—GENERAL PRESENTATION OF SEWAGE AND WATER WORKS CONTRACT AWARDS

A. CONTRACT AWARDS—1961

Contract awards in the sewage and water works field in 1961 reached a record annual level of more than $1.4 billion. The total dollar value in millions is broken down as follows:

Sewage treatment	$448.6
Collecting sewers	379.8
Water works	573.3
Total	$1,401.7

Contracts associated with both sewage treatment and collecting sewers were awarded at record levels. Contracts covering water works facilities stood above figures reported in any previous year except 1960. Annual figures show a 25 percent rise over 1960 figures for sewage treatment contracts, a 6 percent rise over 1960 figures for collecting sewer contracts, and an 11 percent drop from 1960 figures for water works contracts.

Each of the above totals is based upon an identified and an apportioned figure. The identified contracts are those for which the descriptive information available clearly states a single type of construction. Those contracts that cover more than a single type are called "combination" contracts. These combination contracts are then apportioned to the sewage treatment works, collecting sewers, and water works categories on the basis of known national experience in each of these.

On a constant dollar basis, the total dollar value of contract awards in the sewage and water works fields in 1961 was equal to that of 1960. Sewage treatment works contracts were a record high for the ten year period since 1952. Collecting sewer contracts exceeded the 1960 totals, but the total for water works construction dropped substantially from the previous record level, counteracting the rise in sewage treatment contracts.

A comparison of constant dollar values with current dollar values illustrates the effect of the rapid increase in construction costs.

B. METHOD OF DATA COLLECTION

The contract award data presented in this publication for the year 1961 result from the careful examination of over 25,000 contract notifications in the sewage and water works construction and related fields. All notifications of similar contracts awarded in the same geographical area are checked to reduce the chance of duplication. Certain contracts, primarily those covering sewage treatment plants, are checked and verified by the various State water pollution control agencies.

The data on which this report is based were obtained from:

1. F. W. Dodge Corporation, daily reports on construction in the sewage and water works fields in the 37 Eastern States.
2. Construction Daily Reports, McGraw-Hill Company, New York.
3. Various construction news periodicals, such as, *Construction News Bulletin, Pacific Architect and Builder, Rocky Mountain Construction, and Southwest Builder and Contractor.*

Practically all of the information for the 37 Eastern States is obtained from daily reports of the F. W. Dodge Corporation.

The data presented are composed of contracts awarded by municipalities, special districts, other governmental bodies, and various institutions, resorts, recreation centers, etc. A few contracts are included for industries where the cost of such facilities can be readily identified, and where it is possible to ascertain that the facilities are primarily for the disposal of sanitary wastes or for domestic water works facilities.

TABLE 1.—*Annual Contract Awards—Sewage Treatment Works, Collecting Sewers, and Water Works—1952 to 1961*

[Millions of dollars]

Year	Sewage treatment		Collecting sewers		Water works		Total	
	Actual	1955	Actual	1955	Actual	1955	Actual	1955
1952	137	159	225	261	227	263	589	683
1953	187	206	286	314	283	311	756	831
1954	229	241	244	258	293	308	766	805
1955	201	201	301	301	394	394	896	896
1956	354	338	305	291	441	420	1,100	1,049
1957	351	320	247	225	457	416	1,055	961
1958	389	338	310	269	419	364	1,118	971
1959	349	289	336	278	504	417	1,189	984
1960	359	287	359	288	645	516	1,363	1,091
1961	449	349	380	296	573	446	1,402	1,091

NOTES:

1. The *Engineering News-Record* Construction Cost Index is used to change actual dollars to 1955 dollars.

2. The Public Health Service sewage treatment data prior to 1957 are composed of identified contracts only. Beginning with 1957, the figures include an amount apportioned to sewage treatment works from the "combination" contracts.

3. Data on collecting sewers prior to 1957 are obtained by subtracting Public Health Service sewage treatment data from the U.S. Department of Commerce sewer data which includes sanitary and storm sewerage systems as well as sewage treatment works. Beginning with 1957, the data for collecting sewers were assembled by the Public Health Service and do *not* include storm sewers.

4. The water works data prior to 1957 are based on records maintained by the U.S. Department of Commerce. Beginning with 1957, data were obtained by the Public Health Service.

TABLE 2.—*Monthly Contract Awards—Sewage Treatment Works, Collecting Sewers, and Water Works—1961*

[Millions of dollars]

	Sewage treatment		Collecting sewers		Water works		Total	
	Actual	Cumulative	Actual	Cumulative	Actual	Cumulative	Actual	Cumulative
January	25.3	25.3	22.0	22.0	26.2	26.2	73.5	73.5
February	31.2	56.5	23.4	45.4	40.7	66.9	95.3	168.8
March	38.9	95.4	24.6	70.0	65.0	131.9	128.5	297.3
April	36.0	131.4	29.5	99.5	35.4	167.3	100.9	398.2
May	44.5	175.9	31.6	131.1	37.1	204.4	113.2	511.4
June	41.3	217.2	38.6	169.7	56.2	260.6	136.1	647.5
July	34.7	251.9	29.6	199.3	59.7	320.3	124.0	771.5
August	31.9	283.8	38.6	237.9	66.3	386.6	136.8	908.3
September	44.0	327.8	34.8	272.7	36.2	422.8	115.0	1023.3
October	31.9	359.7	44.1	316.8	43.5	466.3	119.5	1142.8
November	41.3	401.0	37.4	354.2	46.1	512.4	124.8	1267.6
December	47.6	448.6	25.6	379.8	60.9	573.3	134.1	1401.7

TABLE 3.—*1961 Contract Awards By States*

State	Total	Sewage treatment	Sewers	Water	Combinations
Alabama	$11,461,449	$4,964,887	$2,861,994	$3,368,743	$265,825
Alaska	5,975,116	2,059,150	1,881,626	1,050,329	984,011
Arizona	11,284,181	2,267,678	6,344,516	2,357,042	314,945
Arkansas	10,740,343	3,534,883	1,271,432	5,799,097	134,931
California	194,464,989	54,904,874	23,645,341	103,218,191	12,696,583
Colorado	9,365,512	3,168,018	1,182,353	4,951,632	63,559
Connecticut	18,094,339	4,114,427	10,562,899	1,123,999	2,263,014
Delaware	2,309,831	1,848,379	443,372	5,100	12,980
District of Columbia	23,331,266	19,178,621	1,206,897	162,790	2,782,958
Florida	44,084,188	9,512,709	12,668,380	9,606,452	12,296,646
Georgia	17,275,776	5,716,957	2,159,598	5,253,428	4,145,793
Hawaii	6,564,589	1,935,085	1,247,270	3,236,311	145,914
Idaho	4,656,654	1,950,285	1,401,195	908,445	396,729
Illinois	74,831,130	17,091,663	19,841,472	29,800,211	8,097,784
Indiana	31,270,578	19,183,523	5,517,569	4,814,535	1,754,951
Iowa	20,091,723	12,461,605	4,810,780	2,621,962	197,376
Kansas	13,744,230	3,634,598	4,566,379	4,717,355	825,898
Kentucky	20,506,783	7,963,166	6,615,210	5,466,505	431,912
Louisiana	23,368,305	6,082,548	6,271,755	6,484,194	4,529,808
Maine	2,793,244	325,574	1,978,457	489,213	
Maryland	29,020,004	5,843,221	6,844,860	8,288,949	8,042,974
Massachusetts	22,069,192	3,411,074	4,552,178	13,067,398	1,038,542
Michigan	61,591,656	19,670,198	20,291,436	18,500,725	3,129,297
Minnesota	30,765,461	5,511,952	6,746,969	8,281,877	10,224,663
Mississippi	7,301,798	2,661,479	1,460,321	1,662,795	1,517,203
Missouri	24,599,802	3,823,347	9,708,846	5,857,499	5,210,110
Montana	2,727,210	865,067	463,998	1,074,087	324,058
Nebraska	18,750,782	9,813,467	5,304,482	3,245,134	387,699
Nevada	1,942,723	1,460,818	132,908	405,074	3,923
New Hampshire	1,257,738		229,365	879,152	149,221
New Jersey	44,442,355	13,010,092	9,169,811	19,777,579	2,484,873
New Mexico	10,617,087	2,467,781		8,025,442	123,864
New York	109,812,437	16,660,418	24,281,480	62,698,492	6,172,047
North Carolina	22,895,376	7,515,566	2,222,459	9,066,146	4,095,205
North Dakota	4,678,174	1,192,626	468,996	2,616,179	400,373
Ohio	88,789,122	28,033,449	24,806,511	27,476,910	8,472,252
Oklahoma	17,003,759	3,328,054	2,161,799	4,283,941	7,229,965
Oregon	11,265,675	2,770,967	1,864,275	4,331,142	2,299,291
Pennsylvania	92,124,143	19,569,267	29,973,704	23,377,855	19,203,317
Puerto Rico	515,687	515,687			
Rhode Island	3,628,338	512,106	338,047	2,312,727	465,458
South Carolina	3,692,998	331,383	747,151	1,710,562	903,902
South Dakota	4,020,758	560,306	221,356	3,020,104	218,992
Tennessee	25,771,201	6,981,662	4,138,311	12,386,077	2,365,151
Texas	91,721,243	9,729,281	19,643,977	55,402,891	6,945,094
Utah	10,806,959	2,231,801	2,864,879	5,660,803	19,476
Vermont	1,222,286	945,137		277,149	
Virginia	18,753,531	5,040,243	2,847,310	9,171,864	1,694,114
Washington	33,084,996	11,807,256	5,626,275	15,034,360	617,105
West Virginia	13,901,434	6,927,921	3,558,808	1,837,381	1,577,624
Wisconsin	42,421,041	7,714,326	16,709,376	14,100,421	3,896,918
Wyoming	4,372,215	547,744	119,770	3,189,572	515,129
Total	$1,401,785,458	$383,021,746	$224,607,853	$542,686,122	$152,069,737

TABLE 4.—*1961 Contract Awards (Distributed) By States*

State	Total	Sewage treatment	Collecting sewers	Water works
Alabama	$11,461,449	$5,079,221	$2,959,682	$3,422,546
Alaska	5,975,116	2,482,383	2,243,240	1,249,492
Arizona	11,284,181	2,403,129	6,460,255	2,420,787
Arkansas	10,740,343	3,592,918	1,321,018	5,826,407
California	194,464,989	60,365,801	28,311,208	105,787,979
Colorado	9,365,562	3,195,356	1,205,710	4,964,496
Connecticut	18,094,339	5,087,772	11,424,534	1,582,033
Delaware	2,309,831	1,853,962	448,142	7,727
District of Columbia	23,231,266	20,375,599	2,229,606	726,061
Florida	44,084,188	14,801,619	17,187,275	12,095,294
Georgia	17,275,776	7,500,104	3,663,135	6,092,537
Hawaii	6,564,580	1,997,844	2,300,892	3,265,844
Idaho	4,656,654	2,120,922	1,546,989	988,743
Illinois	74,831,130	20,574,612	22,817,320	31,439,198
Indiana	31,270,578	19,938,345	6,162,496	5,169,737
Iowa	20,091,723	12,546,498	4,883,314	2,661,911
Kansas	13,744,230	3,989,825	4,869,888	4,884,517
Kentucky	20,506,793	8,178,936	6,773,933	5,553,924
Louisiana	23,368,305	8,030,964	7,936,414	7,401,027
Maine	2,793,244	325,574	1,978,457	489,213
Maryland	29,020,094	9,302,585	9,800,572	9,916,947
Massachusetts	22,069,192	3,857,761	4,933,832	13,277,599
Michigan	61,591,658	21,016,140	21,441,421	19,134,095
Minnesota	30,765,461	9,909,682	10,504,430	10,351,349
Mississippi	7,301,798	3,314,042	2,017,878	1,969,877
Missouri	24,599,802	6,064,268	11,623,509	6,912,025
Montana	2,727,210	1,094,448	553,086	1,139,676
Nebraska	18,750,782	9,980,220	5,446,958	3,323,604
Nevada	1,942,723	1,402,305	134,330	405,988
New Hampshire	1,257,738		260,230	997,488
New Jersey	44,442,355	14,078,881	10,082,977	20,280,517
New Mexico	10,617,087	2,521,056	45,519	8,050,512
New York	109,812,427	19,315,077	26,549,646	63,947,714
North Carolina	22,899,376	9,276,955	3,727,406	9,895,015
North Dakota	4,678,174	1,364,488	616,250	2,697,326
Ohio	88,789,122	31,677,449	27,919,979	29,191,694
Oklahoma	17,003,759	6,437,734	4,818,739	5,747,286
Oregon	11,265,675	3,709,915	2,709,241	4,796,519
Pennsylvania	92,124,143	27,828,806	37,030,731	27,264,606
Puerto Rico	515,087	515,087		
Rhode Island	3,629,338	712,304	509,098	2,408,936
South Carolina	3,602,998	720,031	1,079,216	1,803,751
South Dakota	4,020,756	654,497	301,833	3,064,428
Tennessee	25,771,201	7,698,987	5,007,480	13,064,734
Texas	91,721,243	12,716,435	22,196,230	56,808,578
Utah	10,806,959	2,240,178	2,572,036	5,994,745
Vermont	1,222,286	945,137		277,149
Virginia	18,753,531	5,788,806	3,469,880	9,514,753
Washington	33,084,996	12,072,679	5,853,055	15,159,262
West Virginia	13,901,434	7,606,473	4,136,269	2,158,692
Wisconsin	42,421,041	9,390,430	18,141,454	14,889,157
Wyoming	4,372,215	769,306	309,075	3,293,834
Total	$1,401,785,459	$443,264,279	$379,998,009	$573,553,171

SECTION II—CONTRACT AWARDS—BASIC DATA—1961

This section presents the basic data as compiled; combination projects have not been apportioned. Tables of contract awards by population size groups, contract size groups, drainage basins and States are included.

The population size group tables do not refer to the population served. They represent the size of the community in which each contract was awarded. The population size groups of some contracts were unknown; these contracts consist primarily of schools, hospitals, military bases, and parks. The cumulative percentages shown in these tables are based on the known population groups.

A. SEWAGE TREATMENT WORKS CONSTRUCTION

The sewage treatment works are presented in two categories, namely, NEW PLANT and OTHER. The "NEW PLANT" classification includes stabilization ponds and appurtenances. The "OTHER" category includes replacements and additions to existing treatment plants, interceptors, and outfalls. This category also includes contracts whose costs cannot be separated between "New Plant" and "Other." Therefore, the "Other" classification may include a few new plants.

In 1961 the level of contracts awarded for construction of sewage treatment works in the United States reached a level of $448.6 million. Of this amount $383.0 million covered contracts identified as to specific location and type of construction. The following tables, 5 through 8, inclusive, relate only to contracts individually identified for sewage treatment facilities.

Lists of the locations of contract awards for sewage treatment works are available upon request. Write to Chief, Basic Data Branch, Division of Water Supply and Pollution Control, Public Health Service, Washington 25, D.C.

TABLE 5.—*Contract Awards—Sewage Treatment Works Construction—1961—By Population Size Groups*

Population size group	Total				New plants				Other [1]			
	Number	Dollars	Cumulative [2] (percent)		Number	Dollars	Cumulative [2] (percent)		Number	Dollars	Cumulative [2] (percent)	
			Number	Dollars			Number	Dollars			Number	Dollars
Unknown population size	127	8,180,804			74	4,433,997			53	3,746,807		
Under 500	131	7,266,187	9.9	1.9	84	5,457,817	17.3	5.6	47	1,808,370	5.6	0.6
500–1,000	147	11,247,735	21.0	4.9	85	6,907,852	34.9	12.8	62	4,339,883	13.0	2.2
1,000–2,500	216	29,345,362	37.4	12.7	102	14,129,648	56.0	27.5	114	15,215,634	26.6	7.6
2,500–5,000	149	29,972,750	48.7	20.7	55	11,379,392	67.4	39.3	94	18,593,207	37.8	14.3
5,000–10,000	164	39,350,905	63.1	31.2	50	16,372,583	77.8	56.3	114	22,978,324	51.5	22.6
10,000–25,000	136	46,239,065	71.5	43.6	33	12,219,272	84.6	68.9	103	34,019,793	64.0	34.8
25,000–50,000	64	32,529,103	76.4	52.2	17	8,266,720	88.1	77.5	47	24,270,384	80.6	43.5
50,000–100,000	70	28,694,342	82.4	59.9	14	6,048,413	91.0	83.6	65	22,645,929	77.4	57.6
100,000–250,000	73	22,060,667	87.9	65.6	19	3,817,017	95.0	87.6	54	18,243,650	83.8	73.2
250,000-over	159	128,099,037	100.0	100.0	24	11,720,374	100.0	100.0	135	116,375,663	100.0	100.0
Total	1,447	383,021,746			557	100,754,902			890	282,266,944		

[1] Interceptors, outfalls, additions, enlargements, and alterations to plants, etc. [2] This is based on known population groups.

TABLE 6.—*Contract Awards—Sewage Treatment Works Construction—1961—By Contract Size Groups*

Contract size group (dollars)	Total				New plants				Other [1]			
	Number	Dollars	Cumulative (percent)		Number	Dollars	Cumulative (percent)		Number	Dollars	Cumulative (percent)	
			Number	Dollars			Number	Dollars			Number	Dollars
Under 10,000	127	660,833	8.8	0.2	46	255,305	8.3	0.3	81	435,528	9.1	0.2
10,000–25,000	303	3,466,678	22.8	1.1	94	1,590,003	25.1	1.8	109	1,876,675	21.3	0.8
25,000–50,000	221	8,062,435	38.1	3.2	98	3,513,978	42.7	5.3	123	4,548,457	35.2	2.4
50,000–100,000	252	17,894,609	55.5	7.9	106	7,584,839	61.7	12.8	146	10,309,770	51.6	6.1
100,000–250,000	306	48,652,512	76.6	20.6	114	17,904,632	82.2	30.6	192	30,747,880	73.1	17.0
250,000–500,000	166	60,717,991	88.1	36.4	50	21,771,808	92.8	52.2	107	38,946,183	85.2	30.8
500,000–1,000,000	101	71,128,170	95.1	55.0	23	15,824,560	96.9	67.9	78	55,303,610	93.9	50.4
1,000,000–5,000,000	64	127,653,477	99.5	88.2	16	27,147,944	99.8	94.9	48	99,905,533	99.3	85.8
5,000,000 over	7	45,355,041	100.0	100.0	1	5,161,733	100.0	100.0	6	40,193,308	100.0	100.0
Total	1,447	383,021,746			557	100,754,802			890	282,266,944		

[1] Interceptors, outfalls, additions, enlargements, and alterations to plants, etc.

TABLE 7.—*Contract Awards—Sewage Treatment Works Construction—1961—By Drainage Basins*

Drainage basin	Total		New plants		Other [1]	
	Number	Dollars	Number	Dollars	Number	Dollars
Northeast	99	14,196,951	20	2,833,617	60	11,363,334
North Atlantic	188	67,973,017	61	14,192,379	127	53,780,638
Southeast	139	29,818,097	58	8,608,504	80	21,209,593
Tennessee River	21	5,160,907	9	1,492,733	12	3,668,174
Ohio River	181	59,557,473	80	21,658,128	101	37,899,343
Lake Erie	35	10,145,986	14	2,059,172	21	8,086,814
Upper Mississippi	181	28,302,660	85	9,711,275	96	18,591,424
Western Great Lakes	64	28,476,098	15	1,844,915	49	26,631,183
Missouri River	148	27,735,568	77	10,498,355	71	17,237,213
Southwest—Lower Mississippi	158	18,382,487	65	4,466,822	93	13,815,665
Colorado River	20	3,402,796	8	1,883,784	12	1,519,012
Western Gulf	54	11,103,866	11	960,971	43	10,142,895
Pacific Northwest	61	16,561,394	27	3,860,028	34	12,611,366
California	83	54,519,863	14	12,697,158	69	41,822,705
Great Basin	19	3,273,507	7	1,985,217	12	1,288,290
Alaska	4	2,059,150	2	1,287,016	2	772,134
Hawaii	9	1,996,202	4	684,728	5	1,281,474
Puerto Rico	3	515,687			3	515,687
Total	1,447	383,021,746	557	100,754,802	890	282,266,944

[1] Interceptors, outfalls, additions, enlargements, and alterations to plants, etc.

TABLE 8.—*Contract Awards—Sewage Treatment Works Construction—1961—By States*

State	Total	New plants	Other [1]
Alabama	$4,964,887	$1,647,739	$3,317,148
Alaska	2,059,150	1,287,016	772,134
Arizona	2,267,678	1,158,250	1,109,428
Arkansas	3,534,883	952,582	2,582,301
California	54,904,874	13,007,013	41,897,861
Colorado	3,168,018	1,225,507	1,942,511
Connecticut	4,114,427	413,246	3,701,181
Delaware	1,848,379	63,300	1,785,079
District of Columbia	19,178,621		19,178,621
Florida	9,512,709	3,242,069	6,270,640
Georgia	5,716,957	1,540,780	4,176,177
Hawaii	1,935,085	684,728	1,250,357
Idaho	1,950,285	1,126,423	823,862
Illinois	17,091,683	2,392,411	14,699,272
Indiana	19,183,523	4,040,457	15,143,066
Iowa	12,461,605	7,880,483	4,581,122
Kansas	3,634,598	1,175,985	2,458,613
Kentucky	7,993,166	2,343,612	5,649,554
Louisiana	6,082,548	1,029,398	5,053,150
Maine	325,574	259,403	66,171
Maryland	5,843,221	1,104,149	4,739,072
Massachusetts	3,411,074	649,510	2,761,564
Michigan	19,670,198	821,501	18,848,697
Minnesota	5,511,952	3,690,636	1,821,316
Mississippi	2,661,479	724,624	1,936,855
Missouri	3,823,347	2,853,328	970,019
Montana	865,067	485,932	379,135
Nebraska	9,813,467	491,529	9,321,938
Nevada	1,400,818	745,153	655,665
New Hampshire			
New Jersey	13,010,092	5,602,529	7,407,563
New Mexico	2,467,781	177,673	2,290,108
New York	16,660,418	1,900,092	14,760,326
North Carolina	7,515,566	1,626,216	5,889,350
North Dakota	1,192,026	1,143,498	48,528
Ohio	28,033,449	6,980,398	21,053,051
Oklahoma	3,328,054	880,499	2,447,555
Oregon	2,770,967	422,053	2,348,914
Pennsylvania	19,569,267	10,063,873	9,505,394
Puerto Rico	515,687		515,687
Rhode Island	512,106	57,889	454,217
South Carolina	331,383	73,600	257,783
South Dakota	560,306	174,642	385,664
Tennessee	6,681,662	2,087,994	4,593,668
Texas	9,729,281	1,311,027	8,418,254
Utah	2,231,801	1,291,862	939,939
Vermont	945,137	500,212	444,925
Virginia	5,040,243	1,570,224	3,470,019
Washington	11,807,236	2,341,552	9,465,704
West Virginia	6,927,921	4,306,546	2,621,375
Wisconsin	7,714,326	1,182,059	6,532,267
Wyoming	547,744	23,600	524,144
Total	$383,021,746	$100,754,802	$282,266,944

[1] Interceptors, outfalls, additions, enlargements, and alterations to plants.

B. COLLECTING SEWER CONSTRUCTION

Collecting sewer construction for 1961 totaled $379.8 million. Tables 9, 10, and 11 analyze the contract award data which was specified as purely collecting sewers (i.e., $324.0 million), and do not reflect any portion of the combination projects. The tabulation of the collecting sewer contract awards by States appears in table 3 of section I.

The collecting sewer classification does *not* include storm sewers.

TABLE 9.—*Contract Awards—Collecting Sewer Construction—1961—By Population Size Groups*

Population size group	Collecting sewers			
	Number	Dollars	Cumulative percent [1]	
			Number	Dollars
Unknown population size	123	3,650,304		
Under 500	108	10,195,916	3.4	3.1
500–1,000	136	15,536,241	7.7	8.0
1,000–2,500	234	29,308,580	15.1	17.1
2,500–5,000	238	21,377,232	22.6	23.8
5,000–10,000	357	33,449,640	33.9	34.3
10,000–25,000	477	47,146,587	49.0	49.0
25,000–50,000	314	29,490,102	58.9	58.2
50,000–100,000	266	27,199,665	67.3	66.7
100,000–250,000	334	32,181,541	77.9	76.7
250,000-over	699	74,472,445	100.0	100.0
Total	3,286	324,007,853		

[1] This is based on the *known* population groups.

TABLE 10.—*Contract Awards—Collecting Sewer Construction—1961—By Contract Size Group*

Contract size group (Dollars)	Collecting sewers			
	Number	Dollars	Cumulative percent	
			Number	Dollars
Under 10,000	608	3,150,264	18.5	0.9
10,000–25,000	772	12,650,301	41.9	4.8
25,000–50,000	534	19,343,489	58.2	10.8
50,000–100,000	541	38,885,138	74.7	22.8
100,000–250,000	536	81,360,298	91.0	47.9
250,000–500,000	191	65,662,738	96.8	68.2
500,000–1,000,000	71	48,080,603	98.9	83.0
1,000,000–5,000,000	33	54,875,022	100.0	100.0
5,000,000-over			100.0	100.0
Total	3,286	324,007,853		

TABLE 11.—*Contract Awards—Collecting Sewer Construction—1961—By Drainage Basin*

Drainage basin	Collecting sewers		Drainage basin	Collecting sewers	
	Number	Dollars		Number	Dollars
Northeast	272	30,545,540	Colorado River	43	6,519,376
North Atlantic	415	55,759,792	Western Gulf	189	19,229,216
Southeast	159	21,437,466	Pacific Northwest	105	8,791,753
Tennessee River	15	2,286,570	California	516	23,270,564
Ohio River	290	31,386,368	Great Basin	22	3,297,696
Lake Erie	129	14,965,999	Alaska	3	1,881,626
Upper Mississippi	337	36,279,612	Hawaii	9	1,247,270
Western Great Lakes	300	36,214,997			
Missouri River	280	14,707,106	Total	3,286	324,007,853
Southwest—Lower Mississippi	202	15,186,902			

C. WATER WORKS CONSTRUCTION

The water works data are broken down into four categories, namely, SOURCE, TREATMENT, DISTRIBUTION, and MISCELLANEOUS. The "SOURCE" group includes contracts awarded for wells, surface source development, and transmission lines. The "TREATMENT" area includes contracts for plants and auxiliary facilities. The "DISTRIBUTION" category includes contracts for ground storage, elevated tanks, and distribution systems. The "MISCELLANEOUS" classification includes contracts for pumping facilities and for water systems in general. When it is not possible to code a contract that is known to pertain to water into source, treatment, or distribution then it is included in the totals for miscellaneous.

Contract awards for water works construction in 1961 including an apportioned amount from the combination contracts, totaled $573.3 million. The tables following refer only to contracts that pertain exclusively to water works (i.e., $542.7 million).

TABLE 12.—*Contract Awards—Water Works Construction—1961—By Population Size Groups*

Population size group	Total (Cumulative)[2]		Source (Cumulative)[2]		Treatment (Cumulative)[2]		Distribution (Cumulative)[2]		Miscellaneous[1] (Cumulative)[2]	
	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Unknown population size	7.9	3.8	8.7	3.4	9.6	6.7	6.2	5.5	12.7	4.2
Under 500	15.4	8.9	16.5	4.6	18.3	13.3	13.5	11.6	20.7	7.3
500–1,000	28.6	17.7	27.7	10.6	35.7	18.0	26.7	23.2	34.4	19.8
1,000–2,500	37.8	23.4	35.4	15.7	44.9	20.2	36.5	31.9	42.9	24.2
2,500–5,000	49.2	31.1	45.9	19.8	56.4	24.3	47.7	43.4	56.4	34.8
5,000–10,000	63.5	44.5	60.2	32.1	69.2	38.2	62.7	57.1	68.3	48.9
10,000–25,000	70.7	53.7	69.1	45.5	75.2	44.3	68.7	65.0	75.2	56.5
25,000–50,000	76.0	63.1	74.8	55.4	78.8	52.6	74.7	71.5	81.6	70.4
50,000–100,000	84.6	72.6	82.3	62.9	84.8	70.9	84.2	79.2	87.9	78.7
100,000–250,000	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
250,000–over										

TABLE 12.—*Contract Awards—Water Works Construction—1961—By Population Size Groups*—Continued

Population size group	Total		Source		Treatment		Distribution		Miscellaneous[1]	
	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
Unknown population	340	17,956,906	94	3,389,837	14	1,391,133	131	5,916,628	101	7,259,308
Under 500	306	20,167,616	59	5,648,331	21	682,007	149	9,485,606	77	4,351,672
500–1,000	297	26,573,064	53	1,997,460	19	11,196,774	176	10,236,101	49	3,142,729
1,000–2,500	513	46,419,024	76	9,803,934	38	4,149,916	316	19,709,642	83	12,755,532
2,500–5,000	359	29,778,945	52	8,493,696	20	1,925,481	236	14,857,718	51	4,502,100
5,000–10,000	446	40,380,717	71	6,625,735	25	3,621,188	268	19,394,010	82	10,748,784
10,000–25,000	558	70,465,[illegible]93	97	20,255,173	28	12,363,035	361	23,397,959	72	14,419,676
25,000–50,000	282	48,356,117	60	21,966,235	13	5,382,133	167	13,280,209	42	7,727,540
50,000–100,000	208	48,980,033	39	16,360,388	8	7,324,249	122	11,094,898	39	14,170,498
100,000–250,000	335	50,215,135	57	12,314,692	13	16,266,167	227	13,148,225	38	8,486,051
250,000–over	597	143,383,672	113	60,831,623	33	25,760,557	378	35,139,303	73	21,652,189
Total	4,241	542,686,122	771	167,717,104	232	90,092,640	2,331	175,660,299	707	109,216,679

[1] This includes separate contracts for pumping facilities and other water works contracts that cover more than one of the above divisions.
[2] This is based on the known population groups.

TABLE 13.—*Contract Awards—Water Works Construction—1961—By Contract Size Group*

Contract size group (dollars)	Total (cumulative)		Source (cumulative)		Treatment (cumulative)		Distribution (cumulative)		Miscellaneous [1] (cumulative)	
	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Under 10,000	17.7	.7	23.7	0.5	5.6	.....	18.6	1.4	12.0	0.4
10,000–25,000	42.5	3.9	46.0	2.2	22.4	0.8	45.6	7.7	34.1	2.8
25,000–50,000	60.0	8.8	59.8	4.3	39.6	2.4	64.5	17.6	50.7	6.7
50,000–100,000	79.0	19.4	72.5	8.7	58.1	6.0	84.5	37.8	73.4	17.1
100,000–250,000	90.6	33.1	83.4	16.5	75.8	12.8	95.2	61.0	87.0	30.5
250,000–500,000	95.4	46.2	90.9	28.9	85.3	21.2	98.4	76.6	93.2	44.4
500,000–1,000,000	98.2	61.0	95.7	44.1	91.3	32.0	99.6	87.7	98.3	67.8
1,000,000–5,000,000	99.6	82.0	99.4	75.6	97.8	58.3	100.0	100.0	99.6	82.4
5,000,000-over	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE 13.—*Contract Awards—Water Works Construction—1961—By Contract Size Group*—Continued

Contract size group (dollars)	Total		Source		Treatment		Distribution		Miscellaneous [1]	
	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
Under 10,000	753	4,011,542	183	902,158	13	88,295	472	2,525,088	85	496,001
10,000–25,000	1,050	17,207,962	172	2,808,605	39	649,425	683	11,132,217	156	2,597,715
25,000–50,000	742	26,734,671	106	3,661,472	40	1,309,131	478	17,265,191	118	4,298,877
50,000–100,000	808	57,394,022	98	7,289,077	43	3,164,156	507	35,586,022	160	11,354,767
100,000–250,000	493	74,666,384	84	13,149,144	41	6,148,893	272	40,727,864	96	14,640,483
250,000–500,000	204	70,823,377	58	20,736,400	22	7,654,488	80	27,326,724	44	15,135,765
500,000–1,000,000	116	80,255,045	37	25,433,831	14	9,660,542	29	19,531,559	36	25,629,113
1,000,000–5,000,000	62	114,104,351	28	52,829,358	15	23,730,441	10	21,545,634	9	15,998,918
5,000,000-over	13	97,482,768	5	40,907,059	5	37,517,269	.....	.....	3	19,064,440
Total	4,241	542,686,122	771	167,717,104	232	90,092,640	2,531	175,660,299	707	109,216,079

[1] This includes separate contracts for pumping facilities and other water works contracts that cover more than one of the above divisions.

TABLE 14.—*Contract Awards—Water Works Construction—1961—By Drainage Basins*

Drainage basin	Total		Source		Treatment		Distribution		Miscellaneous	
	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars	Number	Dollars
Northeast	364	46,225,254	76	14,342,397	11	10,278,549	216	14,221,495	61	7,382,813
North Atlantic	570	89,055,533	86	40,035,301	21	12,411,232	386	21,968,796	77	14,640,184
Southeast	289	27,402,652	56	3,630,239	20	6,090,487	159	9,911,911	54	7,761,015
Tennessee River	49	9,338,910	6	2,676,776	6	2,013,473	21	1,620,432	16	3,028,229
Ohio River	377	40,108,987	61	4,963,533	34	7,293,253	219	14,662,892	63	13,189,309
Lake Erie	123	10,587,825	12	2,900,749	9	605,343	85	5,363,018	17	1,718,715
Upper Mississippi	421	44,464,986	88	12,480,988	30	12,763,378	234	14,600,813	60	4,529,807
Western Great Lakes	229	31,991,408	61	11,091,769	14	5,909,745	124	9,137,050	30	5,252,844
Missouri River	271	22,885,038	46	5,182,569	21	3,221,075	149	10,087,270	55	4,394,124
Southwest—Lower Mississippi	313	22,734,455	57	3,705,266	19	1,684,124	183	11,845,376	54	5,499,689
Colorado River	43	3,916,331	7	757,375	4	604,378	24	2,097,230	8	457,328
Western Gulf	447	60,770,299	53	5,585,273	16	3,944,536	314	27,306,308	64	20,934,182
Pacific Northwest	184	30,318,935	31	4,806,436	6	825,692	113	10,314,734	34	4,672,053
California	493	102,033,841	123	47,711,223	12	22,447,355	273	20,064,268	85	11,810,995
Great Basin	39	6,5[illegible],028	5	3,728,401	.....	.....	19	1,203,147	15	1,633,480
Alaska	11	1,050,329	.....	.....	.....	.....	7	554,345	4	495,984
Hawaii	18	3,236,311	3	809,809	.....	.....	5	611,174	10	1,81[illegible],328
Total	4,241	542,686,122	771	167,717,104	232	90,092,640	2,531	175,660,299	707	109,216,079

TABLE 15.—*Contract Awards—Water Works Construction—1961—By States*

State	Total	Source	Treatment	Distribution	Miscellaneous [1]
Alabama	$3,368,743	$112,783		$1,859,286	$1,396,674
Alaska	1,050,329			554,345	495,984
Arizona	2,357,042	679,467	$44,950	1,434,570	198,055
Arkansas	5,799,097	543,102	35,225	3,007,049	2,213,721
California	103,218,191	47,747,663	22,447,355	20,273,771	12,749,402
Colorado	4,951,632	1,092,000	1,480,816	1,482,158	896,658
Connecticut	1,122,909	272,145		689,205	162,649
Delaware	5,100				5,100
District of Columbia	162,790			74,882	87,908
Florida	9,606,453	1,127,035	1,536,092	3,575,841	3,367,485
Georgia	5,253,428	1,038,307	981,509	1,421,044	1,812,568
Hawaii	3,236,311	809,809		611,174	1,815,328
Idaho	908,445	356,258		501,793	50,394
Illinois	29,800,211	10,851,042	9,536,109	6,783,893	2,629,167
Indiana	4,814,535	322,788	654,732	990,565	2,846,430
Iowa	2,621,962	435,764	809,121	1,240,003	377,074
Kansas	4,717,355	421,336	647,808	1,906,436	1,741,775
Kentucky	5,466,505	297,328	2,362,408	1,378,478	1,428,291
Louisiana	6,484,194	295,102	622,836	4,295,271	1,270,985
Maine	489,213	7,248		326,346	155,619
Maryland	8,288,949	2,268,049	1,400,288	1,890,642	2,819,970
Massachusetts	13,067,398	4,671,753	1,803,479	4,984,639	1,607,527
Michigan	18,500,725	9,370,616	2,490,979	4,372,630	2,257,500
Minnesota	8,281,977	740,585	748,957	5,871,753	920,582
Mississippi	1,662,795	395,360	153,217	885,917	228,301
Missouri	5,857,499	1,038,232	1,790,301	1,924,830	1,104,136
Montana	1,074,087	148,110		579,082	346,895
Nebraska	3,245,134	270,720	207,526	2,099,708	667,180
Nevada	405,074	70,588		25,610	308,876
New Hampshire	879,152	71,530	170,000	171,059	466,563
New Jersey	19,777,879	7,862,467	528,056	3,430,842	7,956,214
New Mexico	8,025,442			4,574,031	3,451,411
New York	62,698,492	32,594,180	6,445,577	16,350,905	7,307,830
North Carolina	9,066,146	2,190,890	3,671,071	2,405,780	789,405
North Dakota	2,616,179	17,822	802,783	990,036	805,538
Ohio	27,476,910	5,917,756	1,458,123	13,133,331	6,967,700
Oklahoma	4,283,941	1,530,138	437,485	1,885,850	451,468
Oregon	4,331,142	452,840	394,075	1,850,729	1,633,448
Pennsylvania	23,377,855	805,448	9,679,249	9,944,795	2,948,363
Rhode Island	2,312,727	52,187	1,899,853	360,687	
South Carolina	1,710,862	545,652		751,639	413,571
South Dakota	3,020,104	52,638	29,765	2,819,493	118,208
Tennessee	12,586,077	1,556,749	4,706,124	1,336,503	4,986,701
Texas	55,402,891	9,725,071	4,041,814	34,005,678	17,630,328
Utah	5,090,803	3,699,281	271,038	1,205,433	515,051
Vermont	277,149	42,225		162,753	72,171
Virginia	9,171,804	6,279,330	1,018,000	1,639,295	235,229
Washington	15,034,360	3,697,288	431,617	7,917,244	2,988,211
West Virginia	1,837,361	269,877		426,291	1,141,213
Wisconsin	14,100,421	2,129,059	4,394,282	5,001,868	2,375,212
Wyoming	3,189,572	2,823,436		366,136	
Total	$542,686,122	$167,717,104	$90,092,649	$175,660,299	$109,216,079

[1] This includes separate contracts for pumping facilities and other water works contracts that cover more than one of the above divisions.

D. COMBINATION CONSTRUCTION

Combination contracts are made up of projects that cover more than one of the three major categories: (1) Sewage treatment; (2) collecting sewers; and (3) water works. The combination contract awards by States appear in table 3 of section 1.

TABLE 16.—*Contract Awards—Combination Construction—1961—By Population Size Group*

Population size group	Combinations [1]			
	Number	Dollars	Cumulative [2] (percent)	
			Number	Dollars
Unknown population	83	6,048,364		
Under 500	44	4,324,457	4.0	2.9
500–1,000	62	9,714,999	9.7	9.6
1,000–2,500	104	12,199,750	19.2	17.9
2,500–5,000	82	20,711,051	26.7	32.1
5,000–10,000	91	9,018,274	35.1	38.3
10,000–25,000	93	12,814,709	43.6	47.1
25,000–50,000	79	11,884,151	50.9	55.2
50,000–100,000	45	8,762,264	55.0	61.2
100,000–250,000	244	21,808,905	77.4	76.2
250,000-over	246	34,78[illegible],612	100.0	100.0
Total	1,175	152,069,737		

[1] This includes contracts whose descriptive information covers more than a single category of construction (e.g., sewage treatment, sewers, or water works).

[2] This is based on the *known* population groups.

TABLE 17.—*Contract Awards—Combination Construction—1961—By Contract Size Group*

Contract size group (Dollars)	Combinations [1]			
	Number	Dollars	Cumulative (percent)	
			Number	Dollars
Under 10,000	192	1,108,035	16.3	0.7
10,000–25,000	280	4,539,110	40.1	3.7
25,000–50,000	205	7,249,740	57.6	8.4
50,000–100,000	189	13,896,845	73.7	17.6
100,000–250,000	185	28,070,094	89.2	36.0
250,000–500,000	60	22,732,203	94.8	51.0
500,000–1,000,000	34	23,588,607	97.7	66.5
1,000,000–5,000,000	26	50,885,103	100.0	100.0
5,000,000-over		none	100.0	100.0
Total	1,175	152,069,737		

[1] This includes contracts whose descriptive information covers more than a single category of construction (e.g., sewage treatment, sewers, or water works).

TABLE 18.—*Contract Awards—Combination Construction—1961—By Drainage Basins*

Drainage Basin	Combinations [1]		Drainage Basin	Combinations [1]	
	Number	Dollars		Number	Dollars
Northeast	58	6,445,465	Colorado River	8	426,892
North Atlantic	396	34,959,743	Western Gulf	82	6,751,306
Southeast	122	22,206,214	Pacific Northwest	18	3,545,466
Tennessee River	3	311,340	California	71	11,247,317
Ohio River	64	13,862,572	Great Basin	5	1,518,626
Lake Erie	31	3,846,753	Alaska	3	984,011
Upper Mississippi	131	22,067,868	Hawaii	1	145,914
Western Great Lakes	90	7,007,740			
Missouri River	34	3,078,192	Total	1,175	152,069,737
Southwest—Lower Mississippi	58	13,964,118			

[1] This includes contracts whose descriptive information covers more than one single category of construction (e.g., sewage treatment, sewers, or water works).

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